

VARIABLE-DELAY SIGNAL GENERATORS AND METHODS OF  
OPERATION THEREFOR

ABSTRACT

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A variable-delay signal generator circuit includes a delay chain and an interpolator circuit. The delay chain produces multiple multi-phase signals, where each of the multi-phase signals represents a delayed version of an input event signal. Each of the multi-phase signals is separated from consecutive signals by a first  
10 phase increment. The interpolator circuit includes multiple interpolator blocks, where each block receives a multi-phase signal. The interpolator circuit interpolates between consecutive interpolator blocks, to produce an output signal that represents a modified-delay version of the input event signal. The output signal is delayed to one of multiple phase delays that exist between consecutive multi-phase signals,  
15 inclusive. To produce the output signal, a variable current source within each interpolator block is adjusted, based on a current source select signal. The current source select signal is produced by a bias circuit, which includes a split current source.

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